



## GOVERNOR'S STEM ADVISORY COUNCIL

dedicated to building a strong STEM education foundation for all Iowans

### OVERVIEW

Governor Terry Branstad signed Executive Order 74 in July 2011 to establish the Iowa Governor's STEM (Science, Technology, Engineering and Mathematics) Advisory Council. The STEM Council is a public-private partnership with the mission to increase student interest and achievement in STEM and advance economic development in Iowa. Annually-funded by a legislative appropriation (Appendix B), the STEM Council also receives significant support from business and industry, colleges and universities, program providers and other cost-sharing partners, as well as state and national grants.

Iowa Governor Kim Reynolds and Accumold President and CEO Roger Hargens serve as co-chairs of the STEM Council, consisting of 45 leaders that represent higher education, PreK-12 schools, business and industry, nonprofits, government and more. The STEM Council develops and promotes STEM-specific policies, education programs, STEM events and other STEM resources for Iowans that are provided by way of the STEM Council operations team and the six regional STEM managers and their regional STEM advisory boards.

# Current Iowa STEM Opportunities

**STEM Scale-Up Program.** Approximately 60 percent of the annual state appropriation (\$3.1M) is devoted to delivering exemplary STEM programs to almost 2,000 educators throughout Iowa who collectively engage about 100,000 students every year. Programs undergo a competitive selection process in partnership with the esteemed national organization, “Change the Equation,” to be added to the STEM Scale-Up Program menu. Educators can then apply for these programs. Each region evenly awards programs to Iowa schools, out-of-school programs and other settings for grades PreK-12. These programs range from building robots and wind turbines to virtual reality and STEM career awareness, demonstrating an appeal to diverse youth, success in improving academic performance, evidence of integrating STEM concepts, development of school+business partnerships and sustainability beyond the STEM Council’s financial support. Results from the 2016-2017 Iowa STEM Evaluation Report (see Appendix D) show students who participated in the STEM Scale-Up Program scored on average three points higher in mathematics and reading and four points higher in science in National Percentile Rank on the Iowa Assessments. Visit [www.iowaSTEM.gov/Scale-Up](http://www.iowaSTEM.gov/Scale-Up) to learn more.

**Iowa STEM Teacher Externships.** The Iowa Teacher Externships program places STEM teachers in Iowa workplaces for six weeks in the summer to work side-by-side with knowledgeable and skilled industry professionals who help bring their classroom curriculum to life. Teacher Externships provide educators with the exposure to answer questions about real-world application, how to prepare students for careers they may have in the future and improve overall educational experiences. Teacher Externships began in the summer of 2009 and places nearly 60 teachers in local workplace settings each year. See more at [www.iowaSTEM.gov/Externships](http://www.iowaSTEM.gov/Externships).

**STEM BEST® (Businesses Engaging Students and Teachers).** Since 2014, the STEM Council has established, 37 cost-sharing, innovative and replicable Iowa STEM BEST® sites that immerse students in professional career environments without the need for new buildings or classrooms. Funding supports professional development that equips teams of educators and business partners to provide learning experiences driven by business and industry needs, a rigorous, relevant and dynamic STEM curriculum, and authentic partnerships. Read about the current models by visiting [www.iowaSTEM.gov/STEMBEST](http://www.iowaSTEM.gov/STEMBEST).

**I.O.W.A. STEM Teacher Award.** The STEM Council and Kemin Industries honors certified K-12 teachers in Iowa who teach a science, technology, engineering and/or mathematics subject and who are inspiring Iowa’s students to develop a passion for STEM subjects and careers. The I.O.W.A. STEM Teacher Award is dedicated to honoring one teacher from each of the six Iowa STEM Regions for their contribution and dedication to STEM in Iowa. Each recipient receives a \$1,500 award and \$1,500 to be used in their classroom. More information on this award can be found at [www.iowaSTEM.gov/TeacherAward](http://www.iowaSTEM.gov/TeacherAward).

## Iowa STEM Opportunities continued...

**Microsoft Imagine Academy.** The Microsoft Imagine Academy program is a software and systems certification program that bridges the world of education and work. The program is designed to help drive employability, digital literacy, technical, STEM-focused training and certification. The STEM Council and Microsoft Imagine Academy have partnered to provide 150 Iowa high schools and community colleges with the program. Since 2013, the program has helped certify nearly 7,000 students in Microsoft Office programs. See more at [www.iowaSTEM.gov/MITA](http://www.iowaSTEM.gov/MITA).

**STEM Seal of Approval.** The Seal is awarded to individual programs or periodic events in Iowa that significantly advance STEM principles and thinking in Iowa communities. Learn more at [www.iowaSTEM.gov/Seal](http://www.iowaSTEM.gov/Seal).

## Public Iowa STEM Events

**Family STEM Festivals.** Each region hosts one or more family STEM festivals every year. The regional STEM manager engages (or assigns to a planner or planning committee) a broad range of partners throughout the region in organizing, presenting and participating in the event. STEM festivals are free, engaging, hands-on educational experiences for PreK-12 youth and their families. Eligible activities may include stage events and hands-on exhibits, as well as sessions to boost student interest in STEM.

**STEM Day at the Iowa State Fair.** For this family-friendly event, we fill the Iowa State Fair's Grand Concourse with opportunities to learn about how STEM touches our lives daily and to experience hands-on activities from dozens of organizations across the state. To see it in action, visit [www.iowaSTEM.gov/STEM-Day-Fair](http://www.iowaSTEM.gov/STEM-Day-Fair).

**STEM Day at the Capitol.** With the goal of updating Iowa lawmakers on Iowa STEM, the STEM Council, alongside partners in STEM from across Iowa, talk with legislators to showcase student-focused learning innovations in the State Capitol Rotunda.



# Current Active Working Groups

## Four-Year and Community College STEM Network

**CHARGE:** Regularly convene the “Higher Education STEM Champions” designated at every community college, private college/university and public university to share best practices and collaborate on programming.

## STEM Active Learning Community Partners

**CHARGE:** Create recommendations for the STEM Council in partnering with out-of-school (or Active Learning) groups, including libraries, museums, after-school clubs, non-profits and more.

## STEM Business Engagement

**CHARGE:** Develop strategies to engage all Iowa businesses and workplaces in STEM Council programming opportunities to meet their needs.

## STEM Engagement of School Counselors

**CHARGE:** Identify ways and means for the STEM Council to support and interface with school counselors across Iowa toward post-secondary and career coaching in the STEM spectrum of majors and jobs.

## STEM Equity

**CHARGE:** Identify new opportunities for the STEM Council to provide programming and communication to Iowa in equitable ways across race, gender, age, socioeconomic status, location and other variable characteristics.

## STEM Support of Agriculture Science

**CHARGE:** Identify ways and means for the STEM Council to support agricultural science in Iowa, including the ability to qualify agricultural courses for high school science graduation requirements.

## STEM Support of the Arts and Culture

**CHARGE:** Identify ways and means for the STEM Council to support and interface with arts and culture across Iowa.

## STEM Support of Computer Science

**CHARGE:** Recommend strategies for engaging youth in computer programming and coding and bring forth recommendations for sustaining interest beyond Hour of Code and Code Iowa.

## STEM Volunteer Service

**CHARGE:** Identify opportunities to support and expand STEM in Iowa through volunteering, mentoring and national service.

## STEM Youth Advisory Board

**CHARGE:** Inform the STEM Council’s direction and expand the reach to Iowa youth by investigating and reporting youth perceptions and examining the current activities of the STEM Council.

## STEM Communications

**CHARGE:** Inform the STEM Council’s direction for communicating to various audiences, including developing new materials and targeting audiences important to spreading the Iowa STEM message.

# Iowa STEM Resources

## Guidelines for School+Business

**Partnerships in STEM.** This handbook lists programs that bridge the world of business and education through the STEM Council. Iowa businesses are invited to invest in a variety of ways, whether in the form of time, talents or, in some instances, treasures. Positive change in the quality of our workforce comes from STEM education. Partnerships with businesses, nonprofit organizations and industries are very important to a dynamic STEM education. This guide, as well as a list of our current Corporate Partners, can be found at [www.IowaSTEM.gov/Corporate-Partners](http://www.IowaSTEM.gov/Corporate-Partners).

**Iowa STEM Evaluation Report.** This yearly independent evaluation conducted by an inter-university consortium of evaluation centers at the University of Northern Iowa, the University of Iowa and Iowa State University shows the progress of STEM in Iowa, as well as highlights STEM Council program successes. Find the full report at [www.IowaSTEM.gov/Iowa-STEM-Evaluation](http://www.IowaSTEM.gov/Iowa-STEM-Evaluation) and see some key statistics in Appendix D.

## STEM Public Awareness Campaign.

In 2013, year two of the STEM Council's existence, the need for public awareness of the STEM Council's mission had become apparent. Through competitive bidding, a cost-sharing public relations partner, Strategic America of West Des Moines, was identified to help with branding and messaging through web platforms, social media, cable and network television, billboards, events, fairs, news stories and more. Random surveys of adult Iowans revealed that the percentage aware of STEM and its importance grew from 26% in fall of 2013 to more than half of Iowans four years later.

# Organizational Structure

## Advisory Council and Executive Committee.

The STEM Council's 47 members are appointed by and serve at the pleasure of the Governor, without compensation and in an advisory capacity. The STEM Council includes two elected officials from the Iowa House and two elected officials from the Iowa Senate, who are nonvoting, ex-officio members. The STEM Council is led by the co-chairs, Governor Kim Reynolds and Accumold President and CEO Roger Hargens, and its 15-member Executive Committee. All members are listed at [www.IowaSTEM.gov/Council](http://www.IowaSTEM.gov/Council).

**Regional STEM Managers.** To deliver the promise of STEM to every corner of Iowa, the STEM Council partitioned the state into six regions, each operated by a regional STEM manager housed in a competitively bid, cost-sharing STEM Hub institution (page 8 and 9). Managers are the "boots on the ground" for the STEM Council in each region, delivering services, collaborating and creating community partnerships with business and industry, formal and informal educators and others to corral interest in STEM.

**Regional STEM Advisory Boards.** Strategic visioning for each STEM Region is provided by its Regional STEM Advisory Board. Members of the six regional advisory boards also are appointed by the Governor. Each of the 15 seats represents a key stakeholder group, including educators, business and industry, workforce development, extension, libraries, parents, area education agencies and elected officials. Regional board members serve up to three years in staggered terms. Members must be registered voters in Iowa and reside or work within the region. Visit each regional page to see board membership at [www.IowaSTEM.gov/Regions](http://www.IowaSTEM.gov/Regions).

## STEM Council Operations Team



Jeffery Weld, Ph.D.

Weld@IowaSTEM.gov

Jeffrey D. Weld, Ph.D., is the executive director for the Governor's STEM Advisory Council and associate professor of biology at the University of Northern Iowa (UNI) in Cedar Falls, Iowa. Jeff is serving a one-year assignment at the White House Office of Science and Technology Policy until December 2018. Jeff has directed the Iowa Governor's STEM Advisory Council since fall 2011, and the Iowa Mathematics & Science Education Partnership, the Council's operations arm, since 2008. He has been a member of the UNI biology faculty since 2000. In 2007, Jeff was named the College Biology Teacher of the Year—four-year institutions—by the National Association of Biology Teachers. He has authored more than 50 research articles, essays, book chapters and the textbook, "The Game of Science Education," published in 2004, focusing on research into the barriers to innovative science teaching at the secondary and collegiate levels and how to overcome them. He is past president of the Iowa Science Teachers association and of UNI's chapter of Sigma Xi—the scientific research society.

Prior to joining UNI, Jeff served on the faculty at Oklahoma State University after earning a doctorate in science education with an emphasis in ecology and endocrinology from the University of Iowa in 1998. Formerly a high school biology and chemistry teacher in Mission, Texas; Kirkwood, Missouri; and Pella, Iowa, Jeff was named the Ciba-Geigy 1993 Life Science Teacher of the Year in Iowa; a 1994 recipient of the Pella Corporation Focus on Teaching Excellence award; and in 1995, one of 50 national Access Excellence Fellows of the Genentech corporation. Jeff serves on several state and national boards including the Board of Directors of the National Alliance for Partnerships in Equity Education Foundation and the Triangle Coalition for Science and Technology.



Cindy Dietz

Dietz@IowaSTEM.gov

Cindy Dietz has been appointed as interim executive director of the STEM Council. Cindy has been integral in expanding STEM education in the state. She will serve in a visionary role and will help guide STEM Council efforts in 2018.

Cindy is Director, Business Communications for Rockwell Collins. She was named to the position in July 2015. She leads a team of marketing communications strategists, trade show experts, and creatives who showcase Rockwell Collins' products and services through advertising and marketing collateral, videos and digital experiences. In addition, Cindy leads state and local government relations for the company in Iowa.

Prior to this role, Cindy led the corporate communications function, directing public relations/media strategy, employee communications and community relations.

From 1999 - 2011 Cindy served as Rockwell Collins' Manager of Community Relations and Executive Director of the Rockwell Collins Charitable Corporation. In this role, she established and expanded the company's global charitable giving and employee volunteer programs, and developed the corporation's strategic plan for science, technology, engineering and math (STEM) education outreach.

Cindy was the business representative instrumental in the development and adoption of Iowa's STEM Education Roadmap in 2011, which served as the framework for the Iowa Governor's STEM Advisory Council. She served two three-year terms on the STEM Advisory Council (2011 – 2017).

Cindy serves on a number of state, regional and national boards, including the Iowa Association of Business and Industry, Bankers Trust Cedar Rapids, and the Aviation Industry Association's (AIA) STEM Education Workforce Steering Committee. She served on the board and campaign cabinet of the United Way of East Central Iowa for many years along with other Cedar Rapids-area nonprofit organizations.



Carrie Rankin, B.A.

Rankin@IowaSTEM.gov

Carrie Rankin is the assistant director for development for the Governor's STEM Advisory Council. As assistant director for development, Carrie develops corporate, private sector and grant partnerships on behalf of the STEM Council to further the investment in Iowa STEM Council initiatives. Carrie brings more than 13 years of development experience to this position, most recently as executive director with the Waterloo Schools Foundation, and as development director with both the Allen Hospital Foundation and University of Northern Iowa (UNI) Foundation. A 1989 UNI graduate, Carrie earned her bachelor of arts in chemistry and marketing.



Kari Britain, MPA

Britain@IowaSTEM.gov

Kari Britain is the Program Manager of the Governor's STEM Advisory Council operations center. As program manager, she is responsible for the office operations, budget oversight and coordination of communication and efforts among all stakeholders involved with this partnership. Kari brings with her over 20 years of executive assistant experience in both the public and private sector. She also has an academic background in secondary education, office administration and public administration.



Lindy Ibeling, B.A.

lbeling@IowaSTEM.gov

Lindy Ibeling is the communications manager for the Governor's STEM Advisory Council. As communications manager, she is responsible for strategic communications and marketing plans, implementation of regional and statewide communications, and conferences and events. Lindy brings more than 11 years of experience in public relations, event management, and marketing to this position. Most recently, she served as vice president of a public affairs and public relations firm, where she played a critical role in developing and implementing effective strategies for clients in a wide array of industries. Lindy is a graduate of Wartburg College where she earned her bachelor of arts in communications with a public relations emphasis and a business minor.

## IOWA GOVERNOR'S STEM ADVISORY COUNCIL

### Operations Center

University of Northern Iowa | 214 East Bartlett Hall | Cedar Falls, Iowa 50614-0298

Telephone: 319.273.2959 | Fax: 319.273.2779 | Email: [info@IowaSTEM.gov](mailto:info@IowaSTEM.gov)

[www.IowaSTEM.gov](http://www.IowaSTEM.gov)



## Regional STEM Managers



Mary Trent, M.A.

mtrent@iowalakes.edu

Mary Trent is the Northwest Regional STEM Manager for the Governor's STEM Advisory Council and located at Iowa Lakes Community College. After graduating from Iowa State University with a Bachelor of Science in Elementary Education and a minor in Educational Computing, Mary spent 22 years at Kuemper Catholic School in Carroll as a first grade teacher and technology integration specialist. During that time, she also taught many courses through Heartland AEA and AEA PD Online. Mary later graduated from Morningside College with Master's Degree in Professional Education.



Kelly Bergman, Ph.D.

kbergman@iastate.edu

Kelly has more than 15 years of experience in the energy industry. She carried out and managed investigative work in petroleum exploration and development and also developed novel approaches to carbon sequestration and management. Throughout her career, she has been dedicated to STEM education and outreach through the interaction with STEM instructors and youth STEM activities. She received a Bachelor of Science in Geology from the University of Nebraska-Lincoln. She received a Ph.D. in Marine Geology and Geophysics from the University of Miami, where she spent time as a research assistant and worked with middle school teachers and students to bring environmental science curriculum to the classroom.



Jeff Beneke, B.S.

jeff.beneke@uni.edu

Jeff Beneke serves as the Northeast Regional STEM Manager for the Governor's STEM Advisory Council and located at the University of Northern Iowa. He spearheads work across Northeast Iowa to ensure the Governor's STEM Advisory Council's mission and programs are implemented to their broadest audience, including STEM Scale-Up Program application recruitment, communications planning, STEM family festival work and collaboration with organizations across the region. Jeff brings nearly 20 years of experience in the energy and environmental fields, ranging from laboratory bench work at Test America to business and industry consulting at the Iowa Waste Reduction Center to organizational management for the Iowa Association for Energy Efficiency.







Deb Frazee, M.S. Ed., CRC

frazee@swcciaowa.edu

Deb Frazee serves as the Southwest Regional STEM Manager of the Governor's STEM Advisory Council and located at Southwestern Community College. She has varied career experiences including education and economic development for more than 20 years, as well as time in private industry working as the senior vocational coordinator for a large insurance carrier. She holds a B.A. degree from Iowa State University and an M.S. degree in education from Drake University. She is a licensed Master Educator in Iowa with multiple certifications, but her favorite endorsement is multi-occupations (MOC). She also is a Certified Rehabilitation Counselor (CRC). She has a passion for service and excellence and is excited for the career connections that STEM offers to all ages in all counties of Iowa.



Sarah Derry, Ph.D.

sarah.derry@drake.edu

Dr. Sarah Derry is the South Central Regional STEM Manager for the Governor's STEM Advisory Council and located at Drake University. Sarah earned a B.S. in genetics from Iowa State University and a Ph.D. in developmental biology from the University of Iowa. She has conducted research in commercial and academic laboratories. Sarah started her career as a science teacher in a low-income, urban high school.



Kristine Bullock, M.S. Ed.

kristine-bullock@uiowa.edu

Kristine Bullock is the Southeast Regional STEM Manager for the Governor's STEM Advisory Council and located at the University of Iowa and Kirkwood Community College. Her role is to develop, promote, implement and maintain a seamless collaboration between the other STEM regions, K through 12 teachers and administrators, post-secondary institutions, and business and industry leaders so that there is an open and continuous sharing of resources and opportunities that further the goals of the STEM Council. Kristine earned her BSE in biomedical engineering from the University of Iowa and her M.S. in curriculum and instruction from Christian Brother's University in Memphis, Tennessee. Her previous experience in engineering and as a Teach For America Corps member in Memphis has given her extensive experience in K-12 STEM education.



*Office of the Governor of Iowa*

**TERRY BRANSTAD**

# Gov. Branstad signs Executive Order 74; creates Governor's STEM Advisory Council

**Date:** July 26, 2011

Gov. Terry Branstad today signed [Executive Order 74](#), creating the Governor's Science Technology, Engineering and Mathematics ("STEM") Advisory Council.

"I am pleased today to sign Executive Order 74, establishing the Governor's STEM Advisory Council," said Branstad. "An increased focus in science, technology, engineering and math will lead to higher achievement and better career opportunities."

The signing of Executive Order 74 followed Lt. Gov. Kim Reynolds speech at the Iowa Education Summit where she said, "It's not enough for Iowa to become the top-performing education state again. Our schools must be competitive with the top-performing school systems around the world. As the Advisory Council collaborates with the public and private sectors to promote STEM, the possibilities are promising."

The purpose of the Advisory Council will be advising the governor on ways to improve STEM education, STEM innovation and STEM careers in the public and private sectors. The Council shall be composed of no more than 40 members appointed by the governor. Each member will serve at the pleasure of the governor without compensation and in an advisory capacity.

Gov. Branstad has asked Lt. Gov. Kim Reynolds to co-chair the committee with University of Northern Iowa President, Ben Allen.

For more information, please visit [www.governor.iowa.gov](http://www.governor.iowa.gov).

## Preferred Logos



### GOVERNOR'S STEM ADVISORY COUNCIL

dedicated to building a strong STEM education foundation for all Iowans



## Social Media



/IowaSTEM



@IowaSTEM



Iowa Governor's STEM  
Advisory Council



/IaSTEM



@IowaSTEM



/IowaSTEM

APPENDIX B  
Legislation  
(2014)

FY 2014 STEM

c. Science, technology, engineering and mathematics (STEM) collaborative initiative

For purposes of the science, technology, engineering, and mathematics (STEM) collaborative initiative established pursuant to section 268.7, and for not more than the following full-time equivalent positions:  
\$ 5,200,000 ..... FTEs 6.20

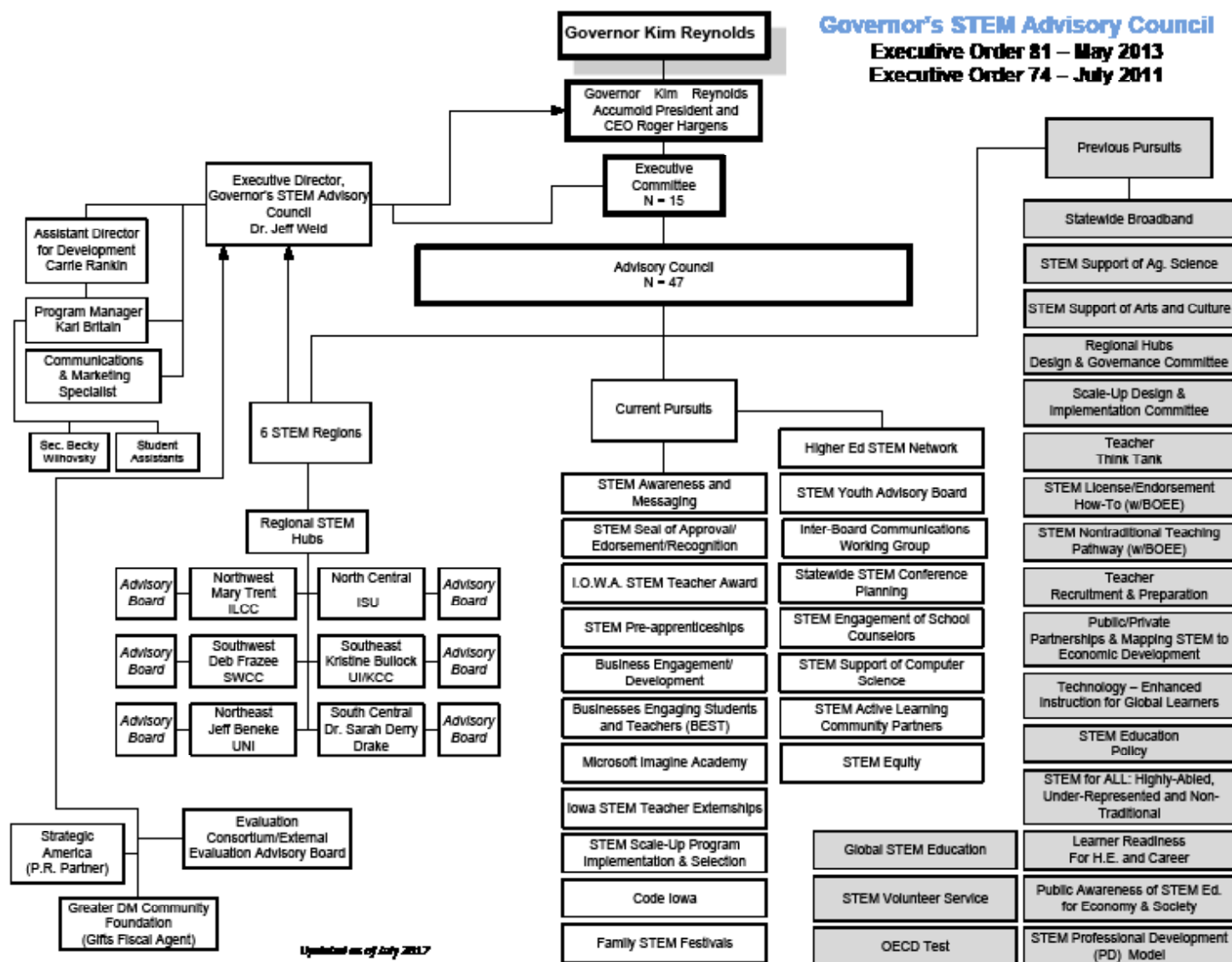
- (1) Except as otherwise provided in this lettered paragraph, the moneys appropriated in this lettered paragraph shall be expended for salaries, staffing, institutional support, activities directly related to recruitment of kindergarten through grade 12 mathematics and science teachers, and for ongoing mathematics and science programming for students enrolled in kindergarten through grade 12.
- (2) The University of Northern Iowa shall work with the community colleges to develop STEM professional development programs for community college instructors and STEM curriculum development.
- (3) From the moneys appropriated in this lettered paragraph, not less than \$500,000 nor more than \$1,000,000 shall be used to provide technology education opportunities to high school, career academy and community college students through a public-private partnership, as well as opportunities for students and faculties at these institutions to secure broad-based information technology certification. The Iowa governor's STEM advisory council shall utilize a request for proposals process for contracts to make available, through the regional STEM network hubs, at high schools, career academies and community colleges, instruction on skills and competencies that are essential for the

workplace and which are requested by Iowa's employers. Such a contract shall include the following components:

- (a) A research-based curriculum.
- (b) Online access to the curriculum.
- (c) Instructional software for classroom and student use.
- (d) Certification of skills and competencies in a broad base of information technology-related skill areas.
- (e) Professional development for teachers.
- (f) Deployment and program support, including but not limited to integration with current curriculum standards.



# APPENDIX C Organizational Chart



## IOWA GOVERNOR'S STEM ADVISORY COUNCIL

### Operations Center

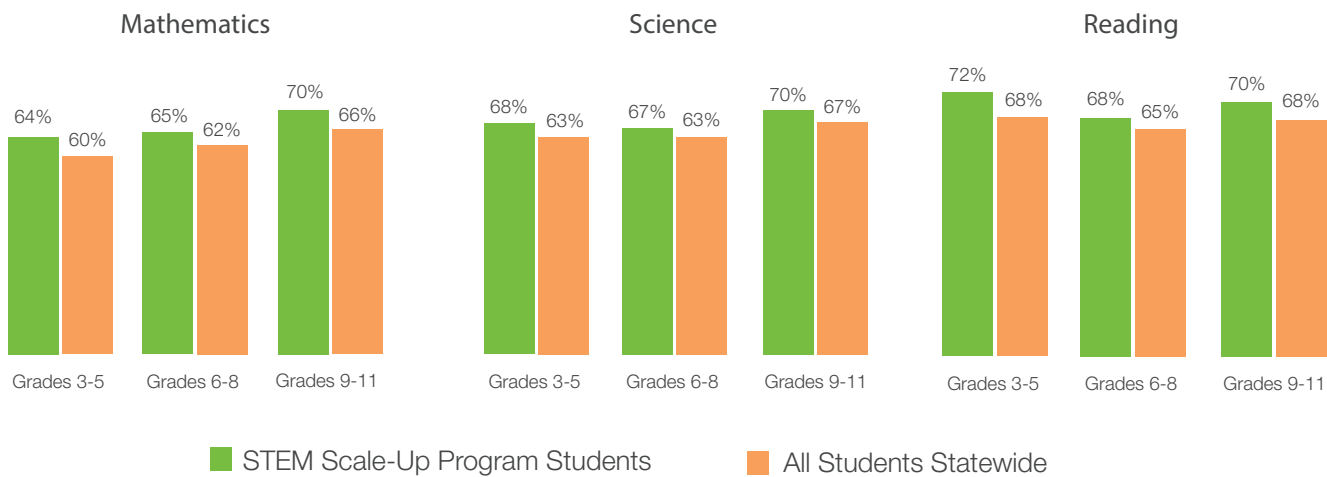
University of Northern Iowa | 214 East Bartlett Hall | Cedar Falls, Iowa 50614-0298

Telephone: 319.273.2959 | Fax: 319.273.2779 | Email: [info@iowaSTEM.gov](mailto:info@iowaSTEM.gov)

[www.iowaSTEM.gov](http://www.iowaSTEM.gov)

# HIGHER STUDENT ACHIEVEMENT IN STEM

On the Iowa Assessments, students who participated in the STEM Scale-Up Program scored higher than students statewide with an average of 3 percentage points higher in National Percentile Rank in mathematics and reading, and 4 points higher in science.



# HIGHER STUDENT INTEREST IN STEM

A higher percentage of students who participated in the STEM Scale-Up Program said they were “very interested” in all STEM-subjects and in pursuing a STEM career compared to all students statewide.

